THE HONG KONG UNIVERSITY OF SCIENCE AND TECHNOLOGY (GUANGZHOU)

Systems Hub

HKUST(GZ)
Postgraduate Programs
2027-28

sysh.hkust-gz.edu.cn

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Welcome

The Systems Hub aims to foster professional elites with global vision and can-do mindset. We wish the prospect students of the Systems Hub are someone with curiosity to knowledge, responsibility to the world, and empathy to mankind. Curiosity motivates the efforts for research. Sense of responsibility enables people to dedicate themselves to their society. Empathy promotes open innovation among peers.

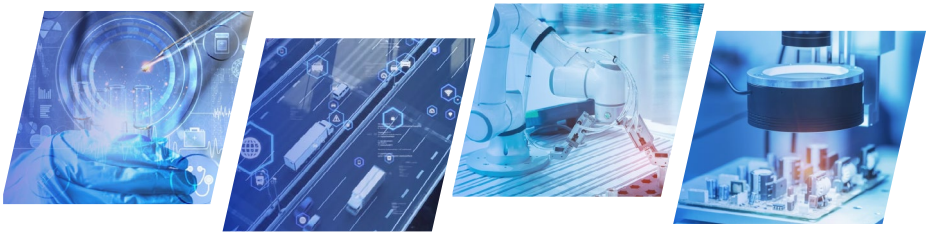
We are dedicated to cultivating professional elites with broad vision and can-do mindset. We expect the students of Systems Hub to engage in enquiry-based cross-disciplinary acting learning, maintaining curiosity and passion for knowledge, holding idealistic aspirations for the world, and deep empathy for others. Curiosity serves as the driving force for deepening scientific research. Sense of responsibility acts as the internal impetus for giving back to society. Empathy becomes the cohesive force for collaborative win-win outcomes. With all these elements, the alumni of Systems Hub will be able to create value through learning and research.

Prof. Robert Zhong QI
Acting Dean of Systems Hub

Systems Hub

Vision

To be a global leading facilitator for enlightening creative minds and fostering visionary talents, and to develop scientific knowledge, offer engineering methodologies, and solve cross-disciplinary problems.



Mission

To serve as a platform for merging individual technologies together and implement their integrated functionality at the systems level, and to disseminate impactful technologies to the Greater Bay Area and explore relevant industrial or societal applications.
The Systems Hub hosts a cluster of cross-disciplinary thrust areas in Bioscience and Biomedical Engineering (BSBE), Intelligent Transportation (INTR), Robotics and Autonomous Systems (ROAS), and Smart Manufacturing (SMMG). Based on the fundamental research in various technical fields, the Systems Hub will facilitate the integration of multidisciplinary technologies and explore their applications. In addition to theoretical framework and experimental validation, computational modeling and simulation will be emphasized as well. Research highlights of the Systems Hub include, but are not limited to, bioinformatics and implanted devices, information fusion from multiple traffic sensing modalities, personal assistive robotics and human-robot interaction, implementation of Industry 4.0 and additive manufacturing.

Faculty Overview

The faculty team at Systems Hub comprises exceptional individuals with vast experience and knowledge. They have graduated from world-renowned universities and are passionate about scientific research and teaching excellence. We integrate excellent research capabilities, cross-disciplinary insights, and innovative pedagogy to cultivate future talents and provide a world-class education to our students.
Our strong industry connections through collaborations and exchanges bring in business leaders as Professors of Practice or members of our external advisory committees. This connection offers industrial insights, research collaboration opportunities, internships, and placements to cultivate cross-disciplinary talents. Our faculty team is dedicated to providing our students with the skills and knowledge they need to succeed in today's fast-paced and ever-changing world.

Enquiries

gzsystems@hkust-gz.edu.cn

Bioscience and Biomedical Engineering Thrust

Introduction

Bioscience and Biomedical Engineering Thrust are intricately connected fields dedicated to harnessing knowledge to improve human well-being. Our educational and research endeavors are central in advancing the understanding, integration, and real-world application of biological science and biomedical engineering. These disciplines are inherently interdisciplinary, spanning diverse domains including physics, chemistry, biology, information technology, and computer science, illustrating their comprehensive nature in advancing human life.

Cross-Disciplinary Focus Areas

Stem Cell Biology

Investigating fundamental mechanisms of stem cells for translational regenerative therapies.

Chemical Biology

Designing small molecules to probe biological pathways and develop novel therapeutics.

Synthetic Biology

Engineering artificial biological systems for sustainable bioproduction and applications.

Neuroscience

Decoding neural circuits to understand brain function and neurological disorder mechanisms.

Cell and Tissue Engineering

Constructing functional tissues via cell manipulation and biomaterial-guided development.

Biomaterial Science

Developing advanced biomaterials for medical implants and regenerative medicine uses.

Bioinformatics

Mining big biological data to model systems and decode complex molecular networks.

Facilities

To fulfil our mission of fostering cross-disciplinary education and research while nurturing well-rounded talents, HKUST(GZ) has established an integrated research platform. Within this platform, the Bioresearch Lab plays a pivotal role by offering state-of-the-art research facilities and equipment to individuals who have a keen interest in bioscience and biomedical engineering research. Our Bioresearch Lab is comprehensively equipped with a wide array of advanced facilities and essential instruments, ensuring that it can cater to a diverse range of research needs.

Research Postgraduate Programs

MPhil **Master of Philosophy in Bioscience and Biomedical Engineering***

PhD **Doctor of Philosophy in Bioscience and Biomedical Engineering**

The Master of Philosophy and Doctor of Philosophy Programs in Bioscience and Biomedical Engineering aim to provide a well-rounded education as well as rigorous research training to prepare students to become versatile and knowledgeable professionals. Areas of research include molecular and cell biology, chemical biology, synthetic biology, biomaterial science, bioinformatics and data mining, etc.
MPhil graduates should possess a good mastery of knowledge in bioscience and biomedical technologies, be able to apply engineering principles to solve problems in medicine and biology, and generate novel solutions.
PhD graduates should be capable of conducting high-quality original research, creating new knowledge, deriving valuable insights, and making tangible impacts in academia and the field.

**Students are admitted centrally through University-based admission to the Master of Philosophy (General) Program. By end of Fall Term, students will declare to enter one of the 16 Master of Philosophy programs offered by the Thrusts.*

Enquiries

MPhil	rbmadmit@hkust-gz.edu.cn
PhD in Bioscience and Biomedical Engineering	bsbepg@hkust-gz.edu.cn

Intelligent Transportation Thrust

Introduction

The Intelligent Transportation Thrust aspires to develop cutting-edge technologies that integrate transportation, communications and networking, artificial intelligence, and data science, for operations and management of multi-modal transportation systems to enhance the efficiency, safety, and sustainability of mobility for people, vehicles and goods.

Cross-Disciplinary Focus Areas

Advanced Air Mobility

Urban air mobility, low-altitude aviation and aerial transit systems

AI-empowered Transportation

AI-driven intelligent decision-making and coordinated traffic control.

Connected and Autonomous Vehicles

Vehicle-road-cloud integration, automated driving and safe mobility.

Human Factors in Transportation

Traveler behavior, safety, ergonomics and user experience.

Logistics and Freight Transportation

Efficient distribution, green logistics and smart freight scheduling.

Mobility as a Service

Integrated multi-modal mobility and one-stop travel services.

Transportation Economics

Cost-benefit analysis, policy evaluation and market mechanisms.

Transportation Electrification and Sustainable Transportation

Zero-carbon electrification, energy saving and green development.

Transportation Operations Management

Traffic organization, operation efficiency and service improvement.

Transportation Resilience

Risk resistance, rapid recovery and system reliability.

Urban Computing and Spatio-temporal Data Mining

Data-driven urban governance and traffic pattern mining.

Urban Rail Transit

High-capacity rapid transit, backbone of urban public transport.

Facilities

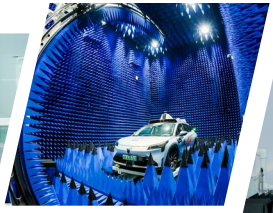
The Intelligent Transportation Thrust is supported by a portfolio of high-end laboratories and cutting-edge facilities. These include several key provincial and municipal laboratories, as well as joint innovation centers, such as:

- Guangdong Provincial Key Laboratory of Integrated Communication, Sensing and Computation for Ubiquitous Internet of Things,
- Guangzhou Municipal Key Laboratory of Seamless Connectivity and Connected Intelligence, Transportation Behavioral Psychology and Safety Lab (TBPS Lab),
- Greater Bay Area All-Space Unmanned System Technology Innovation Center (Nansha), etc.

Our flagship R&D infrastructure features multiple "first-in-the-Greater-Bay-Area" test platforms:

- The first anechoic water tank in GBA that can connect to a smart sandbox, simulating a deep-sea environment for research in underwater communication and robotics.
- The first Terahertz (THz) anechoic chamber supporting full-scale vehicle testing, array antenna testing, and integrated sensing-communication R&D.
- The Vehicle-to-Everything (V2X) test platform focused on connected intelligence, which includes an L4 autonomous driving fleet with intelligent Road Side Unit (RSU) system and an integrated virtual simulated traffic demonstration platform. This enables practical exploration of V2X and validation of intelligent traffic signal control and vehicle-infrastructure coordination.

These facilities collectively solidify the thrust's R&D capabilities in seamless connectivity and connected intelligence.



Research Postgraduate Programs

MPhil **Master of Philosophy in Intelligent Transportation***

PhD **Doctor of Philosophy in Intelligent Transportation**

The Master of Philosophy (MPhil) and Doctor of Philosophy (PhD) Programs in Intelligent Transportation aim to provide a well-rounded education as well as rigorous research training to prepare students to become versatile and knowledgeable professionals in intelligent transportation engineering and technologies. Areas of research may include acquisition, analysis and applications of traffic big data; shared mobility, mobility as a service (MaaS); analysis, modelling, and optimization of transportation system with connected and autonomous vehicles (CAV); testbed and traffic simulation of connected and autonomous vehicles (CAV); operations and management of urban rail transit systems; safety and security of unmanned aerial vehicle (UAV); green aviation technologies; automated port operations and shipping logistics.

MPhil graduates should be able to demonstrate a good mastery of knowledge in transportation technology, system design and public policy aspects, making contributions to the industry.

PhD graduates should be capable of conducting high-quality original research, creating new knowledge, deriving valuable insights, and making tangible impacts to academia and the field.

**Students are admitted centrally through University-based admission to the Master of Philosophy (General) Program. By end of Fall Term, students will declare to enter one of the 16 Master of Philosophy programs offered by the Thrusts.*

Enquiries

MPhil
PhD in Intelligent Transportation

rbmadmit@hkust-gz.edu.cn
intr@hkust-gz.edu.cn

Taught Postgraduate Program

MSc Master of Science in Smart Transportation*

The Master of Science in Smart Transportation aligns with the strategic positioning of the Intelligent Transportation Thrust. Centered on cutting-edge technologies including artificial intelligence, big data, communications and the Internet of Things, the program caters to the rapidly growing market needs for intelligent connected vehicles, urban air mobility, multimodal transportation systems and smart infrastructure. It cultivates high-level interdisciplinary talents well-prepared for the transformative development of next-generation smart mobility.

This is a two-year full-time program with a total of 38 academic credits. The curriculum is designed in line with world-class academic standards, comparable to graduate programs offered by top global universities. Integrating systematic theoretical learning, project-based practical training and industry-oriented data analytics capability development, the program enables students to master cutting-edge theoretical knowledge and engineering technologies in transportation infrastructure planning, intelligent traffic control, connected vehicle technologies, multimodal traffic data analysis and smart mobility decision-making. The program aims to nurture highly competitive professionals to support the sustainable development of the smart transportation industry across the Guangdong-Hong Kong-Macao Greater Bay Area, China and the world.

** Pending MOE approval*

Robotics and Autonomous Systems Thrust

Introduction

Robotics is a transdisciplinary branch of engineering and science that deals with the design, construction, operation, and use of robots, as well as computer systems for their control, sensory feedback, and information processing. An autonomous system is a system that performs tasks with a high degree of autonomy (without external influence). Designing and managing Robotics and Autonomous Systems requires diverse skills from various engineering disciplines such as electronics, mechatronics, control and signal processing together with state-of-the-art computer science such as software architecture, algorithms and data structures or artificial intelligence.

Cross-Disciplinary Focus Areas

- **Autonomous Robotic Systems**
- **UUV, USV, and UAV Systems**
- **Field Robotics**
- **Robotics and Autonomous Systems for Underwater, Offshore, Nearshore, Forest, and Agriculture**
- **Robotics and Autonomous Systems for Construction and Social Infrastructure Maintenance**
- **Biologically Inspired Robotics and Biomimetic Robots**
- **Personal Assistive Robotics and Human-Robot Interaction**
- **Robotic Manipulation and Grasping**
- **Robot Learning, Embodied AI, and Swarm Intelligence**
- **Robotic Arts**

Facilities

There are three research institutes actively involved in research related to the Robotics and Autonomous Systems Thrust:

- **Institute of Integrated Service Robots**
- **Intelligent Autonomous Driving Center**
- **Embodied Intelligence Research Institute**

Research Postgraduate Programs

MPhil **Master of Philosophy in Robotics and Autonomous Systems***

PhD **Doctor of Philosophy in Robotics and Autonomous Systems**

The Master of Philosophy and Doctor of Philosophy Programs in Robotics and Autonomous Systems aim to provide well-rounded education as well as rigorous research training to prepare students to become versatile and knowledgeable professionals, with the broad fields of robotics engineering as a major focus, together with connections to theoretical and applied mechanics, optimization, communication, information theory, machine learning, computing, mathematics and signal processing.
MPhil graduates should be able to demonstrate mastery of knowledge in design, construction, operation, and management of robots, and develop innovative solutions required by the emerging global industry in Robotics and Autonomous Systems, and across many other sectors where ROAS skills are applicable.
PhD graduates should be capable of conducting high-quality original research, creating new knowledge, deriving valuable insights, and making tangible impacts on academia and the field.

**Students are admitted centrally through University-based admission to the Master of Philosophy (General) Program. By end of Fall Term, students will declare to enter one of the 16 Master of Philosophy programs offered by the Thrusts.*

Enquiries

MPhil	rbmadmit@hkust-gz.edu.cn
PhD in Robotics and Autonomous Systems	roas@hkust-gz.edu.cn

Smart Manufacturing Thrust

Introduction

Smart Manufacturing encompasses highly adaptive and agile computer-integrated manufacturing technologies. By leveraging digital analyses and intelligent technologies, it promotes the development of more flexible and more efficient manufacturing technologies.
The Thrust focuses on advanced manufacturing technology, digital and intelligent technology, biomanufacturing, and sustainable manufacturing. It is dedicated to exploring relevant new theories, developing cutting-edge technologies, and researching and developing new systems and equipment—including cross-scale intelligent manufacturing technology, human-machine-physical integrated intelligent systems, embodied intelligent equipment and systems, and ecological and special manufacturing engineering—thereby enhancing the quality and efficiency of the manufacturing industry and advancing it towards greener and more flexible development.

Cross-Disciplinary Focus Areas

- **Additive and Hybrid Manufacturing**
- **Advanced Multi-axis Machining**
- **Chip Manufacturing and Packaging**
- **Micro/Nanoscale Manufacturing**
- **Human-Cyber-Physical Manufacturing System**
- **Industrial AI and Data Analytics**
- **Intelligent Quality Management**
- **Robotics in Manufacturing**
- **Green and Sustainable Manufacturing**
- **Biomanufacturing and Biomedical Equipment**

Facilities

Theme-based Labs related to the Smart Manufacturing Thrust:

Advanced Additive Manufacturing Lab (AAM Lab)

Advanced Hybrid Manufacturing Lab (AHM Lab)

Center for Heterogeneous Integration of μ-systems and Packaging (CHIP)

Research Postgraduate Programs

MPhil Master of Philosophy in Smart Manufacturing*

PhD Doctor of Philosophy in Smart Manufacturing

The Master of Philosophy (MPhil) and Doctor of Philosophy (PhD) Programs in Smart Manufacturing aim to provide students with a detailed understanding of each level of manufacturing process, combining skills in mathematics, science and business to prepare them in developing innovative ways of systems design and product production. The program design focuses on providing fundamental knowledge as well as hands-on training in the curriculum. Students graduated from the program will be versatile and well-equipped to derive valuable insights and make sound decisions in manufacturing. The programs will also offer new pedagogical training to prepare research students with specialized and transferrable skills to cope with new manufacturing engineering settings.

**Students are admitted centrally through University-based admission to the Master of Philosophy (General) Program. By end of Fall Term, students will declare to enter one of the 16 Master of Philosophy programs offered by the Thrusts.*

Taught Postgraduate Program

MSc Master of Science in Smart Manufacturing

The Master of Science Program in Smart Manufacturing provides professional training and educates a new breed of workforce for the fourth industrial revolution, featured by advanced computer technologies (such as AI and big data) and new manufacturing technologies (such as 3D printing). We seek to train and equip students with cutting-edge knowledge in smart design and manufacturing technologies, sensing, data analytics, and control. The rigorous program lasting for two-years (full time) (38 credits in total) will provide theoretical, experimental, and data-analytical training comparable to similar MSc degrees offered by leading universities in China and other countries. The MSc(SMMG) program is strategically in line with the Smart Manufacturing Thrust and will educate and produce the much-needed workforce for the region and beyond.

Enquiries

MPhil	rbmadmit@hkust-gz.edu.cn
MSc in Smart Manufacturing	smmgmsc@hkust-gz.edu.cn
PhD in Smart Manufacturing	smmgpg@hkust-gz.edu.cn

Submit Your Application

Admission Requirements

To qualify for admissions to HKUST(GZ), applicants must meet all of the following requirements. Admission is selective and meeting these minimum requirements does not guarantee admission.

1. General Admission Requirements

For all applicants seeking postgraduate admission

- a **bachelor's degree** from a recognized institution, or an approved equivalent qualification

For PhD applicants (additional to the above)

- a proven record of outstanding performance from a recognized institution or presented evidence of satisfactory work at the postgraduate level on a full-time basis for at least one year, or on a part-time basis for at least two years

2. English Language Requirements

Fulfill the English language requirements with one of the following proficiency attainments [1]:

Proficiency Test	Minimum Score
TOEFL – Internet-based Test (iBT)[2]	80 (for tests taken prior to 21 January 2026) 4.5 (for tests taken from 21 January 2026 onwards)
TOEFL – Paper-based Test (pBT)	550
TOEFL – Revised Paper-delivered Test	60 (total scores for Reading, Listening and Writing sections)
IELTS (Academic Module)[2]	Overall score: 6.5 and all sub-scores: 5.5

[1] *You are not required to present TOEFL or IELTS score if your first language is English, or you obtained bachelor's degree (or equivalent qualification) from an institution where the medium of instruction was English.*

[2] *Refers to scores in one single attempt only. Test at home option is not accepted.*

3. Program-Specific Admission Requirements

Some programs may stipulate additional requirements for admission.

Admission Timeline

2027-28 Fall Intake	
PhD	**21 July 2026 to 15 June 2027 (23:59, GMT+8)** for international applicants **21 July 2026 to 15 July 2027 (23:59, GMT+8)** for Chinese applicants
Red Bird MPhil	Please visit *cft.hkust-gz.edu.cn/admission* for details
Taught Postgraduate	Please refer to the "Application" tab on the *fytgs.hkust-gz.edu.cn/postgraduate-programs* page for details
Admission offers issued	August 2026 to August 2027 Admission offers will be issued on a rolling basis, according to individual program's admission schedule
Program registration	Mid-August 2027
On-campus registration and New Student Orientation Week	Late August 2027
Program commencement	1 September 2027

2027-28 Spring Intake (exclusively for PhD & MBA Programs)	
Application Period	July 2027 to December 2027 Please check the detailed closing dates at *fytgs.hkust-gz.edu.cn/timeline* and apply well before the respective deadlines
Program registration	Early January 2028
On-campus registration and New Student Orientation Week	Mid-January 2028
Program commencement	End-January 2028

Studentship

Postgraduate Studentship (PGS) for MPhil and PhD Students

- **CNY 10,000 per month**, up to **2 years** for full-time MPhil students
- **CNY 15,000 per month**, up to **4 years** for full-time PhD students

Tuition Fees

Research Postgraduate Programs

MPhil/PhD (with PGS) Full-time

- CNY 60,000 per academic year

PhD (self-financed) Full-time/Part-time

- CNY 150,000 per academic year

Taught Postgraduate Programs

- **Fees vary for each program.** Please refer to fytgs.hkust-gz.edu.cn/programs ("General Information") for details.

The booklet was published in July, 2026.
For the most up-to-date information, please refer to fytgs.hkust-gz.edu.cn

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The Hong Kong University of Science and Technology (Guangzhou)